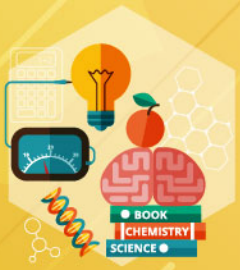
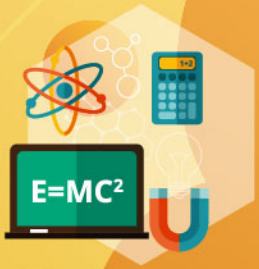
UMS
UNIVERSITI MALAYSIA SABAH

UNIVERSITI MALAYSIA SABAH

PREPARATORY CENTRE FOR SCIENCE AND TECHNOLOGY

SESSION 2021/2022





Eco Campus
Transforming Ideas Into Reality

Transformation towards UNIVERSITY INDUSTRY 4.0

UNIVERSITI MALAYSIA SABAH

HAND BOOK PREPARATORY CENTRE FOR SCIENCE AND TECHNOLOGY

SESSION
2021/2022

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Abbreviation Note:
Preparatory Centre for Science and Technology / Pusat Persediaan Sains dan Teknologi **(PPST)**
Faculty of Science and Natural Resources/Fakulti Sains dan Sumber Alam **(FSSA)**

FOREWORD

VICE CHANCELLOR
of Universiti Malaysia Sabah

Assalamualaikum Warahmatullahi Wabarakatuh. Alhamdulillah, praise and gratitude to Allah the Almighty. Salam EcoCampus.

The entire Universiti Malaysia Sabah community and I would like to honour you with warm congratulations for all newcomer students of the 12th cohort of Foundation in Science and the 2nd cohort of Foundation in Information Technology, session 2021/2022 of Preparatory Centre for Science and Technology, Universiti Malaysia Sabah. The foundation students are the contributors of the future generation. For that reason, UMS aims to produce students with a high level of knowledge, to become more submissive and be closer to the one True Creator. Hence, UMS Science Foundation students are the assets who can contribute to resolving the issues related to sustainability and community either locally or globally.

Studying science is a field of study that leads the students to study natural science systematically and as a result, they will be more meticulous and become more responsible individuals. At the same time, students need to be more dynamic in choosing their preferred fields at the undergraduate level by not focusing too much on examinations and careers only.

Education that does not prioritize nobility, morality and accountability principles is considered as a failure that fails to produce a great civilization. Besides that, UMS has a great responsibility to impart knowledge to all of the people in Sabah. Therefore, the appreciation of ethics and accountability is a responsibility that must be understood and practised especially by the students and educators in educational professionalism to enable future generations to become more civilized and dignified. Indeed, this effort is in line with the government's objectives in the Malaysian Education Development Plan.

Last but not least, I would like to congratulate the newcomer students once again who have been offered by the UMS Foundation in Science and Foundation in Information Technology programmes. Remember that civilization starts with the construction of a strong value system that is influenced by good elements. The collapse of civilization in the past was due to the collapse of its values and morals.

Wabillahi Taufik Wal Hidayah Wassalamualaikum Warahmatullahi Wabarakatuh.

Professor Datuk ChM. Ts. Dr. Taufiq Yap Yun Hin

FOREWORD

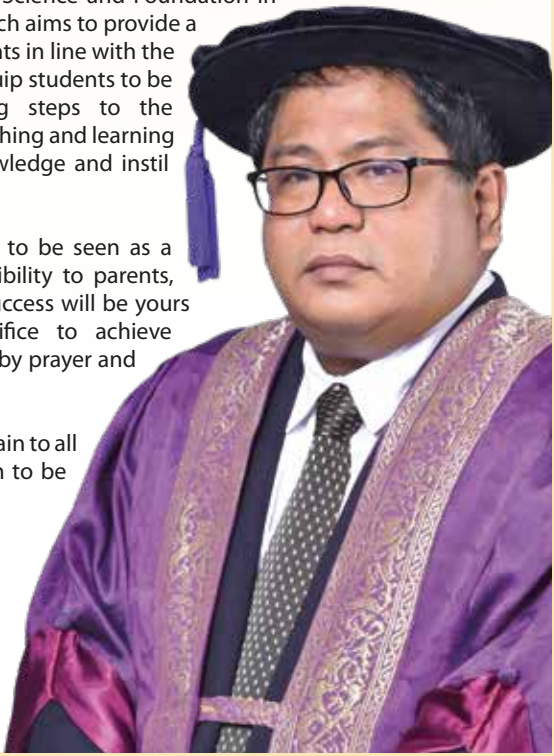
DIRECTOR
of Preparatory Centre for Science and Technology

Assalamualaikum w.b.t and good morning,

Praise be to Allah, peace and blessings of Prophet Muhammad and on his household and companions. With His grace, we are grateful to be together at the Preparatory Centre for Science and Technology (PPST), Universiti Malaysia Sabah. I would like to offer my heartfelt congratulations to the Foundation in Science and Foundation in Information Technology Programmes students, PPST, UMS, session 2021/2022. It is a great pleasure and honour for all PPST staff to welcome the new students.

Eleven years have passed since the establishment of PPST, UMS, and the current intake of the 2021/2022 session is our 12th cohort of Foundation in Science and the 2nd cohort of Foundation in Information Technology. Today, 2261 alumni of Science Foundation students are pursuing further education in various undergraduate programs at the faculties in Universiti Malaysia Sabah. We hope that the Preparatory Centre for Science and Technology, UMS will continue its mission to provide more students for the undergraduate program in the future.

PPST is holding the responsibility and trust to continuously advance the university agenda, particularly in leading the Foundation in Science and Foundation in Information Technology Programmes, which aims to provide a solid foundation of basic science to students in line with the university facilities provided. It aims to equip students to be more confident and willing in taking steps to the undergraduate level. Undoubtedly, all teaching and learning activities implemented will improve knowledge and instil moral values in each student.



These opportunities and privileges need to be seen as a mere advantage, instead, it is a responsibility to parents, families and even universities. I believe success will be yours when there are persistence and sacrifice to achieve excellence that is dreamed, accompanied by prayer and support from the family and God's will.

Last but not least, congratulations once again to all of the students, and keep the enthusiasm to be successful today and in the future.

ALL THE BEST.

Assoc. Prof. Dr. Jumat Bin Sulaiman

HUMBLE BEGINNING

PREPARATORY CENTRE FOR SCIENCE AND TECHNOLOGY

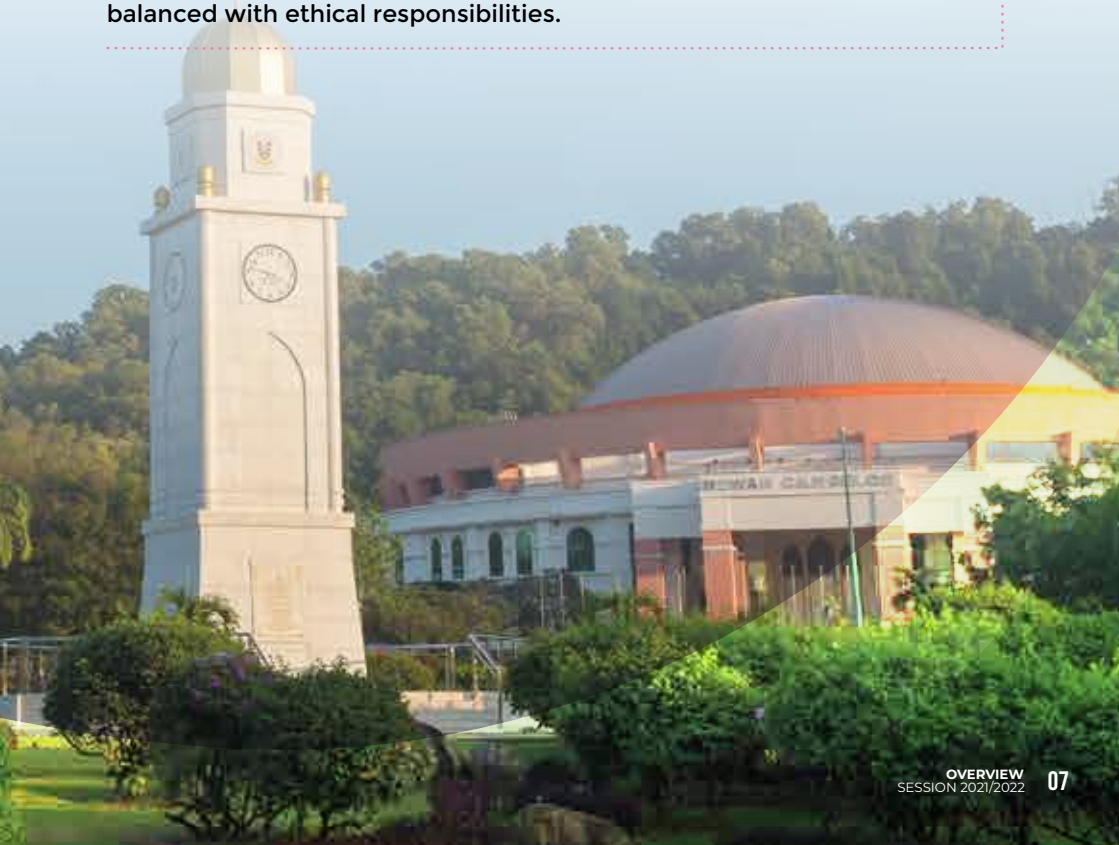
The Preparatory Centre for Science and Technology (PPST) establishment was approved by the Ministry of Higher Education in 2010. PPST was inaugurated with the launch of the Foundation in Science Programme on 26 April 2010 and began accepting students for its first intake in May 2010. Placed under the supervision of the Faculty of Science and Natural Resources, PPST's principle directions were concentrated on teaching and learning activities to strengthen the student's basic science and technology knowledge to prepare them for the coming challenges they will face when obtaining their Bachelor Degree in Universiti Malaysia Sabah. On November 17, 2011, PPST was approved by the Management Authority of Universities (PBPU) as an independent Centre of Responsibilities. By 2013, the central administration was fully managed by the team at the Preparatory Centre for Science and Technology.

VISION

The Preparatory Centre for Science and Technology is committed to becoming the epicentre of learning excellence for undergraduate programmes based on the teaching and learning methodologies in combining both practical and theoretical foundations towards sustainable and established science and technological developments.

MISSION

The Preparatory Centre for Science and Technology is dedicated to preparing the students for undergraduate programmes through a quality teaching and learning process whilst at the same time inculcating noble values towards academic excellence balanced with ethical responsibilities.



MANAGEMENT TEAM ORGANISATION

PREPARATORY CENTRE FOR SCIENCE AND TECHNOLOGY

Vice Chancellor
Universiti Malaysia Sabah
Professor Datuk ChM. Ts. Dr. Taufiq Yap Yun Hin
BSc. (UPM), MA. (UPM), Ph.D (MIST United Kingdom)

Deputy Vice Chancellor
(Academic and International)
Prof. Dr. Rasid Mail
B. Acct (H). (UUM),
M. Acc. (Dundee University), Ph.D (UiTM)

Deputy Vice Chancellor
(Student Affairs and Alumni)
Assoc. Prof. Dr. Raman Noordin
Dip. In Acc (ITM)., ADIA (ITM)., MSc. In Accounting (UEA, Norwich, UK)., Ph.D (USM)

Deputy Vice Chancellor
(Research and Innovation)
Assoc. Prof. Ts. Dr. Ramzah Dambul
BSc. (UM), MA (NU of Malaysia). (UM), Ph.D (Uni of East Anglia)

Registrar
Luqman Ridha Anwar
B. Arts (UKM)

Bursar
Zallifah Shadan
B. Acct. (Hons) UUM, C.A (M)

Head of Librarian
Tuan Haji Zawawi Tiyunin
MBA (EDU, Aust.) Adv. Dip. Library (UiTM)

Director
Preparatory Centre for Science and Technology
Assoc. Prof. Dr. Jumat Bin Sulaiman
BSc, MIT, PhD(UKM)

Deputy Director (Academic)
Preparatory Centre for Science and Technology
Dr. Mohd. Azrul Abdul Rajak
BSc. (UTM), Ph.D (UTM)

Deputy Director (Research & Student Affairs)
Preparatory Centre for Science and Technology
Ts. Dr. Hjh Fadzilah Ag Kanak
BSc. (UKM), MSc. (UMS), PhD (UTHM)

Biology Coordinator
Dr. Sitty Nur Syafa Bakri
BSc. (UMT), MSc. (UKM), PhD (Hokkaido)

Chemistry Coordinator
Ayu Afiqah Nasrullah
BSc., MSc. (UM)

Physics Coordinator
Dr Muhammad Nur Rashidi Rosli
BSc. (USM), MSc. (UKM), PhD (UKM)

Mathematics Coordinator
Dr. Che Haziqah Che Hussin
BSc. (UMT), MSc. (UPM), PhD (USM)

English Courses Coordinator
Nur Anneliza Abd Latip
BEd. TESL (UMS)

General Courses Coordinator
Iziana Hani Ismail
BEd. TESL (UM)

Programme Coordinator (Foundation in Information Technology)
Jetol Bolongkikit
BSc. (UTM), MSc. (UM)

Programme Coordinator (Foundation in Agriscience)
Dr. Nurliyana Juhan
BEd. (UMS), MSc. (UM), Ph. D (UTM)

Assistant Registrar
Awang Jamaludin Bin Jumat
Bsc.(UKM)

Science Officer
Nur Sarifarinah Asmuin
BSc. (UNIMAS)

INFORMATION ON FOUNDATION PROGRAMMES
LIST OF LECTURERS

FOUNDATION IN SCIENCE PROGRAMME

CORE COURSES

BIOLOGY

Dr. Sitty Nur Syafa Bakri
BSc. (UMT), MSc. (UKM), Ph.D (Hokkaido)

Ts. Dr. Hjh Fadzilah Ag Kanak
BSc. (UKM), MSc. (UMS), Ph.D (UTHM)

Makdi Masnoddin
BSc., MSc. (UMS)

Nur Ramziahrazanah Jumat
(Study Leave)
BSc., (UMS), MSc. (UPM)

Azlinah Binti Matawali (Study Leave)
BSc., MPhil (UMS)

CHEMISTRY

Ayu Afiqah Nasrullah
BSc., MSc. (UM)

Nur Hazwani Dahon
BSc., MSc. (USM)

Megawati Mohd Yunus
BSc., MSc. (UiTM)

Dr. Mohd. Azrul Abdul Rajak
BSc. (UTM), Ph.D (UTM)

Eddy Mohd Farid Mohd Yusslee
BSc., MSc. (UMS)

PHYSICS

Dr. Muhammad Nur Rashidi Rosli
BSc. (USM), MSc. (UKM), Ph.D (UKM)

Siti Nazirah Butai
BSc., MEd. (UTM)

Huzaikha Awang (Study Leave)
BSc. (UMS), MSc. (HWUM), MEng. (UMS)

Nur Fadzilah Basri (Study Leave)
BSc., MSc. (UMS)

Elnetthra Folly Eldy (Study Leave)
BSc., MSc. (UMS)

Jackson Chang Hian Wui (Study Leave)
BEd., MSc. (UMS)

MATHEMATICS

Dr. Che Haziqah Che Hussin
BSc. (UMT), MSc. (UPM), Ph.D (USM)

Dr. Nurliyana Juhan
BEd. (UMS), MSc. (UM), Ph.D (UTM)

Muhamad Azlan Daud
BSc., MSc. (UPM)

Suriana Lasaraiya
BSc., Msc. (UPM)

Johannah Jamalul Kiram
(Study Leave)
BSc. (UM), MSc. (UMS)

ENGLISH

Nur Anneliza Abd Latip
BEd. TESL (UMS)

Iziana Hani Ismail
BEd. TESL (UM), MEd. TESL (UMS)

Assoc. Prof. Dr. Wardatul Akmam Din
BA. (Essex), MA. (Warwick), MPhil. (Manchester), Ph.D (UUM)

Siti Fatimahtuzzahrah Kanak
BEd. TESL (UMS)

Uswatun Nurrahmah Noorhassanah
BEd. TESL (UMS)

Queencie Dohny
BEd. TESL (USM)

Mohamad Rafley Bin Abdul Rasit
(Study Leave)
B.HSc (UIAM), Dip Ed. (Gaya), MEd. (UMS)

GENERAL COURSES

ANALYTICAL SKILLS

Datu Razali Datuk Datu Hj Eranza
B.Mgt (UNITAR) M.HCM (UMS)

Andy Lee Chen Hiung
B.C.M, M.C.M (Lincoln, NZ)

ETHICS IN SCIENCE

Assoc. Prof. Ts. Dr. Sazmal Effendi Arshad
Dip. Ind. Chem. (ITM), BSc. (JM Liverpool), Ph.D (Sheffield)

Dr. Nurul Elyani Mohamad
BEng. (UIAM), Ph.D (UPM)

INFORMATION & COMMUNICATION TECHNOLOGY (ICT)

Teong Khan Vun
BEng (MMU), MSc (USM)

Rechard Lee
BSc. (UPM), MSc. (UMS)

Norhafiza Binti Hamzah
BSc., MSc. (UTM)

TASAWUR ISLAM & MORAL

Ustaz Razali bin Saibin
B.A Takhasus Quran Wal-Qiraat (Al-Azhar), M.Psy. Couns. Dr.ug Abuse (UMS)

Dr. Norhabibah Artini Ramlie
B. Islamic Studies (UKM), M.Edu (UKM), Ph.D (UM)

Mohd Shahrizal bin Sabal
B.A. (Hons) Arabic Language (Al-Azhar)

Datu Razali Datuk Datu Hj Eranza
B.Mgt (UNITAR) M.HCM (UMS)

Andy Lee Chen Hiung
B.C.M, M.C.M (Lincoln, NZ)

LIST OF LECTURERS

FOUNDATION IN INFORMATION TECHNOLOGY PROGRAMME

INTRODUCTION TO PROGRAMMING
Jonathan Likoh
BIT (Hons) , MSc. IT (UUM)

INTRODUCTION TO WEB PROGRAMMING
Jonathan Likoh
BIT (Hons) , MSc. IT (UUM)

BASIC MULTIMEDIA
Siti Hasnah Tanalol
BIT (UKM), MSc (Stathclyde, UK)

DATABASE
Asni Tahir
BIT(UUM), MIT(UKM)

INTRODUCTION TO THE NETWORK
Jetol Bolongkikit
BSc. (UTM), MSc. (UM)

INTRODUCTION TO E-COMMERCE
Jetol Bolongkikit
BSc. (UTM), MSc. (UM)

APPLICATION DESIGN AND DEVELOPMENT
Asni Tahir
BIT(UUM), MIT(UKM)

IT PROJECT
Siti Hasnah Tanalol
BIT (UKM), MSc (Stathclyde, UK)

CURRICULUM STRUCTURE
FOUNDATION IN SCIENCE PROGRAMME

COMPONENT	SEMESTER 1			SEMESTER 2		
	SUBJECTS		CREDIT HOURS	SUBJECTS		CREDIT HOURS
GENERAL	UB0013	Academic English for Writing and Speaking	3	UB0023	Academic English for Reading and Listening	3
	UT0012/ UC0022/ UE0022	Introduction to Information Technology / Analytical Skills/ Ethics in Science	2	UT0012/ UC0022/ UE0022	Introduction to Information Technology / Analytical Skills/ Ethics in Science	2
CORE	SM0015	Algebra, Geometry and Calculus	5	SM0025	Algebra, Calculus, Statistics and Probability	5
	SF0014	Mechanics & Thermal Physics	4	SF0024	Optics, Modern Physics & Electricity	4
	SF0011	Practical Physics I	1	SF0021	Practical Physics II	1
	SK0014	Physical and Inorganic Chemistry	4	SK0024	Analytical and Organic Chemistry	4
	SK0011	Practical Chemistry I	1	SK0021	Practical Chemistry II	1
	SB0014	Cell Diversity, Reproduction, Ecology and Development	4	SB0024	Physiology and Genetics	4
	SB0011	Practical Biology I	1	SB0021	Practical Biology II	1
TOTAL CREDIT HOURS			25			25

OVERALL TOTAL CREDIT HOURS 50

COURSE SYNOPSIS
FOUNDATION IN SCIENCE PROGRAMME

ENGLISH COURSES

COURSE NAME

ACADEMIC ENGLISH FOR WRITING AND SPEAKING

COURSE CODE

UB0013

SYNOPSIS

This course aims to familiarise students with reading and writing skills and to introduce them to the types of academic writing. In addition, students will be taught how to develop a clear presentation of ideas in an essay. Among the aspects of writing that they will learn are the writing process, the basic organisation of a typical five-paragraph essay, important elements in an essay such as thesis statement, topic sentences and supporting ideas which they will utilise when they learn the different types of genre in writing. Students also will be taught speaking skills and apply them in their daily communication.

CREDIT
3

COURSE NAME

ACADEMIC ENGLISH FOR READING AND LISTENING

COURSE CODE

UB0023

SYNOPSIS

This module aims to equip students with the advanced skills needed for academic reading. A variety of texts from a range of disciplines will be used as materials in teaching this module. Students will be taught to use strategies that will be useful to them when reading academic texts related to their main course of study. They will be taught to present their ideas to an audience. This module also aims to teach students' listening comprehension of both formal and informal situations. Skills to be taught are recalling information, paraphrasing, predicting outcomes, distinguishing facts from opinions, summarizing and drawing a conclusion.

CREDIT
3

GENERAL COURSES

COURSE NAME

INTRODUCTION TO INFORMATION TECHNOLOGY

COURSE CODE

UT0012

SYNOPSIS

This course was designed to provide students with the fundamental aspects of computer and Information Technology. The topics covered in this course are components of computer hardware, system and software application, classification of computer, networking components, the internet and web development. At the end of the course, the students should be able to understand the basic concepts of computer systems and to realize their use in the industries.

CREDIT
2

COURSE NAME

ANALYTICAL SKILLS

COURSE CODE

UC0022

SYNOPSIS

Analytical thinking is the process by which we develop and support our beliefs and evaluate the strength of arguments made by others in real-life situations. It involves actively and skillfully conceiving, applying, analysing, and evaluating information gathered from observation, experience, reflection, reasoning or communication as a guide to belief and action. This course encourages students to reflect on the processes of thinking, as well as developing and practising thinking skills.

CREDIT
2

COURSE NAME

ETHICS IN SCIENCE

COURSE CODE

UE0022

SYNOPSIS

The course aims to discuss the ethical questions and problems that arise in scientific and professional environments. This course incorporates analytical as well as experiential and emotional elements. It focuses on historical perspectives and current practices of ethics and responsibility in practising science. Students will learn ethical practices in science and relate them to real-world issues. Students will also get the latest knowledge to explain the rationale behind ethics.

CREDIT
2

MATHEMATICS

COURSE NAME

ALGEBRA, GEOMETRY AND CALCULUS

COURSE CODE

SM0015

SYNOPSIS

This course starts with a topic in Algebra and Geometry which is a concept through linear algebra approach, followed by real numbers and complex numbers, then followed by a discussion on equations, inequalities and absolute values. A detailed study on polynomials which has been introduced at the SPM level and also ideas related to Binomial Theorem, Residual Theorem and partial fraction problems are discussed. Several topics in geometry analysis are also discussed, which are problems related to straight lines, circles, parabolas, ellipses and hyperbolas. The discussed topics also include scalar quantities, velocities, forces and momentum in topic vectors. This course continues with topics in Calculus which is the basic concept of functions and graphs. This course prepared the students for the concepts of derivatives and their applications. This course also covered the integral definition and Riemann summation, as well as techniques of integration which is also called antiderivative. Their applications like finding the volume and area and related problems for indefinite and definite integrals are discussed. Then the concept of trigonometric functions, inverse, definitions and basic identities are also introduced.

CREDIT
5

COURSE NAME

ALGEBRA, CALCULUS, STATISTICS TAND PROBABILITY

COURSE CODE

SM0025

SYNOPSIS

This course begins with the topic of Algebra and Calculus with the sequence and series concepts as well as the matrix topics and linear system equations. Ideas and topics about limitations and continuity of functions will be discussed at the base level. The derivation and integration of the trigonometric functions will be discussed more thoroughly, a continuation from Semester 1. Topics in the hyperbolic functions are also discussed and followed by differential equations including methods in solving differential equations utilizing differentiation equations. In the end, the topic for the Numerical Method will also be introduced. Essentially the topic of Statistics and Probability-based on data scheduling and representation, followed by the size of central tendency measurement (min, mod, median) and distribution of measurements (variance and standard deviation). This is followed by permutation and its combination before learning the introduction to probability with further discussion of random variables. Followed by the probability of distribution such as normal distribution, binomial, Poisson and also discussion of mean and variance for a discrete and continuous probability distribution. At the end of this course, sampling distribution and hypothesis testing are also introduced.

CREDIT
5

CORE COURSES

PHYSICS

COURSE NAME
MECHANICS & THERMAL PHYSICS

COURSE CODE
SF0014

SYNOPSIS

This course will discuss the principles in basic Physics, mechanics, matter and thermal physics. Topics such as physical quantities and measurements; kinematics; force, momentum and impulse, work, energy and power; dynamics and statics; rotational motion; rotational equilibrium and dynamics of rotational motion; gravitation; matter; elasticity; temperature and heat, kinetic theory of gases and thermodynamics will be covered.

CREDIT
4

COURSE NAME
PRACTICAL PHYSICS I

COURSE CODE
SF0011

SYNOPSIS

This practical course includes experiments in the topics of mechanics and thermal physics. It is to expose the students to laboratory techniques and concepts.

CREDIT
1

COURSE NAME
OPTICS, MODERN PHYSICS & ELECTRICITY

COURSE CODE
SF0024

SYNOPSIS

This course will cover topics such as simple harmonic motion and oscillation, waves and sound, optics, EM waves, electrostatics, electric field, electric potential, capacitor, direct and alternating current, circuit theory, electrical appliances and magnetism. In modern physics, topics such as magnetic field, electron, photon, nucleus and radioactivity will be covered.

CREDIT
4

CHEMISTRY

COURSE NAME
PRACTICAL PHYSICS II

COURSE CODE
AF0021

SYNOPSIS

This practical course includes experiments in the topics of optics, electricity and magnetism. It is to expose the students to laboratory techniques and concepts.

CREDIT
1

COURSE NAME
PHYSICAL AND INORGANIC CHEMISTRY

COURSE CODE
SK0014

SYNOPSIS

This course discusses the basic principles of physical chemistry and inorganic chemistry. In physical chemistry, the topics covered will include the theory of gas kinetics, the properties of liquid and solid, chemical equilibria, ionic equilibria, solubility equilibria, electrochemistry and thermochemistry. Where else in inorganic chemistry, the topics covered are on the atomic structure, quantum theory, electron configuration and atomic orbitals, periodic table, transition element, chemical bonding, Lewis structure, VSEPR and hybrid orbitals.

CREDIT
4

COURSE NAME
PRACTICAL CHEMISTRY I

COURSE CODE
SK0011

SYNOPSIS

This course deliberates practically the principles in physical chemistry and inorganic chemistry. Discussions shall include the kinetics theory of gas, the properties of liquid and solid, electrochemistry, chemical equilibrium, pH, the periodic table, chemical bonding, Lewis structure and hybrid orbitals.

CREDIT
1

CORE COURSES

COURSE NAME
ANALYTICAL AND ORGANIC CHEMISTRY

COURSE CODE
SK0024

SYNOPSIS

This course will discuss the basic principles in analytical and organic chemistry. Topics learned in analytical chemistry include the introduction to qualitative and quantitative analysis, type and methods of analysis applied like gravimetric, volumetric and neutralization titration as well as calculations involving different expressions of concentration. While in organic chemistry, the topics discuss the classification of organic compounds, nomenclature, physical and chemical properties, chemical reactions and reaction mechanisms.

CREDIT
4

COURSE NAME
PRACTICAL CHEMISTRY II

COURSE CODE
SK0021

SYNOPSIS

This course discusses practically the principles in analytical and organic chemistry. Topics such as solution and stoichiometry, error in chemical analysis, types of titration, acid-base indicator, functional groups of organic compounds, alcohol, carbonyl and carboxyl will be covered.

CREDIT
1

BIOLOGY

COURSE NAME
CELL DIVERSITY, REPRODUCTION, ECOLOGY AND DEVELOPMENT

COURSE CODE
SB0014

SYNOPSIS

This course covers major topics in biology which includes cells as a basic unit of life, cell structures and organelles, cell division, plasma membrane and movement of molecules, varieties of molecules, an introduction to bioenergetics, reproduction, development, and growth. Active learning environment through direct involvement of students is encouraged through other topics in biodiversity, variation, taxonomy, population genetics, and ecology.

CREDIT
4

COURSE NAME
PRACTICAL BIOLOGY I

COURSE CODE
SB0011

SYNOPSIS

This practical course includes experiments in the topics of cells as a unit of life, molecules of life, reproduction and growth, variation and ecology. In this course, students are mainly introduced to basic biological laboratory techniques for handling and observing cells and organisms using compound microscopes.

CREDIT
1

COURSE NAME
PHYSIOLOGY AND GENETICS

COURSE CODE
SB0024

SYNOPSIS

This course covers major topics in biology which includes genetic inheritance, expression of biological information, introduction to biotechnology, gene technology, immunity, infectious diseases, biocatalyst, photosynthesis, cellular respiration, gaseous exchange, transport in animals and plants, and nervous system and coordination. Students will be involved in an active learning environment through group discussion, a poster presentation as well as problem-based learning.

CREDIT
4

COURSE NAME
PRACTICAL BIOLOGY II

COURSE CODE
SB0021

SYNOPSIS

This practical course includes experiments in the topics of genetic inheritance, expression of biological information, gene technology, biocatalyst, photosynthesis, cellular respiration and transport in animals and plants. This course aims to expose students to laboratory techniques and fundamental concepts in biology.

CREDIT
1

CURRICULUM STRUCTURE
FOUNDATION IN INFORMATION TECHNOLOGY

COMPONENT	SEMESTER 1			SEMESTER 2		
	SUBJECTS		CREDIT HOURS	SUBJECTS		CREDIT HOURS
GENERAL	UB0013	Academic English for Writing and Speaking	3	UB0023	Academic English for Reading and Listening	3
	UC0022	Analytical Skills	2	UE0022	Ethics in Science	2
CORE	CM0014	Mathematics I	4	CM0024	Mathematics II	4
	CP0015	Introduction to Programming	5	CP0025	Introduction to Web Programming	5
	CT0014	Fundamental of Multimedia	4	CE0023	Introduction to E-commerce	3
	CD0013	Database	3	CA0024	Application Design & Development	4
	CN0013	Introduction to Networking	3	CK0025	IT Project	5
TOTAL CREDIT HOURS			24			26

OVERALL TOTAL CREDIT HOURS 50

COURSE SYNOPSIS
FOUNDATION IN INFORMATION TECHNOLOGY

COURSE NAME

ACADEMIC ENGLISH FOR WRITING AND SPEAKING

COURSE CODE

UB0013

SYNOPSIS

This course aims to familiarize students with writing and speaking skills. They will apply the skills of the Process Writing Approach and learn how to infer and paraphrase information from any given materials, and learn to identify and differentiate main ideas and supporting details of a passage. In addition, students will be taught how to develop a clear presentation of ideas in an essay. Among the aspects of writing that they learn are the writing process, the basic organization of a typical five-paragraph essay, important elements in an essay such as thesis statements, topic sentences and supporting ideas which they will utilize when they learn the different types of genre in writing. This course also aims to improve students' oral communication skills in the English Language. Students are exposed to the principles and techniques of effective oral integration. In addition, students are taught effective strategies in communication and appropriate communicative skills to enable them to speak spontaneously and fluently. They are given the opportunities to interact in real-life situations through language activities such as discussions, simulations and role-plays.

CREDIT
3

COURSE NAME

ACADEMIC ENGLISH FOR READING AND LISTENING

COURSE CODE

UB0023

SYNOPSIS

This module aims to equip students with the advanced skills needed for academic reading. A variety of texts from a range of disciplines will be used as materials in teaching this module. Students will be taught to use strategies that will be useful to them when reading academic texts related to their main course of study. They will be taught to present their ideas to an audience. This module also aims to teach students' listening comprehension of both formal and informal situations. Skills to be taught are recalling information, paraphrasing, predicting outcomes, distinguishing facts from opinions, summarizing and drawing conclusions.

CREDIT
3

COURSE NAME
ANALYTICAL SKILLS

COURSE CODE
UC0022

SYNOPSIS

Analytical thinking is the process by which we develop and support our beliefs and evaluate the strength of arguments made by others in real-life situations. It involves actively and skillfully conceiving, applying, analysing, and evaluating information gathered from observation, experience, reflection, reasoning or communication as a guide to belief and action. This course encourages students to reflect on the processes of thinking, as well as developing and practising thinking skills.

CREDIT 2

COURSE NAME
ETHICS IN SCIENCE

COURSE CODE
UE0022

SYNOPSIS

The course aims to discuss the ethical questions and problems that arise in scientific and professional environments. This course incorporates analytical as well as experiential and emotional elements. It focuses on historical perspectives and current practices of ethics and responsibility in practising science. Students will learn ethical practices in science and relate them to real-world issues. Students will also get the latest knowledge to explain the rationale behind ethics.

CREDIT 2

MATHEMATICS

COURSE NAME
MATHEMATICS I

COURSE CODE
CM0014

SYNOPSIS

This course starts with a topic in Algebra and Geometry which is a concept through linear algebra approach, followed by real numbers and complex numbers, then followed by a discussion on equations, inequalities and absolute values. A detailed study on polynomials which has been introduced at SPM level and also ideas related to Binomial Theorem, Residual Theorem and partial fraction problems are discussed. Several topics in geometry analysis are also discussed, which are problems related to straight lines, circles, parabolas, ellipses and hyperbolas. The discussed topics also include scalar quantities, velocities, forces and momentum in topic vectors. This course continues with topics in Calculus which is the basic concept of functions and graphs. This course prepared the students for the concepts of derivatives and their applications. This course also covered the integral definition and Riemann summation, as well as techniques of integration which is also called antiderivative. Their applications like finding the volume and area and related problems for indefinite and definite integrals are discussed. Then the concept of trigonometric functions, inverse, definitions and basic identities are also introduced.

CREDIT
4

COURSE NAME
MATHEMATICS II

COURSE CODE
CM0024

SYNOPSIS

This course begins with the topic of Algebra and Calculus with the sequence and series concepts as well as the matrix topics and linear system equations. Ideas and topics about limitations and continuity of functions will be discussed at the base level. The derivation and integration of the trigonometric functions will be discussed more thoroughly, a continuation from Semester 1. Topics in the hyperbolic functions are also discussed and followed by differential equations including methods in solving differential equations using differentiation equations. In the end, the topic for the Numerical Method will also be introduced. Essentially the topic of Statistics and Probability-based on data scheduling and representation, followed by the size of central tendency measurement (min, mod, median) and distribution of measurements (variance and standard deviation). This is followed by permutation and its combination before learning the introduction to probability with further discussion of random variables. Followed by the probability of distribution such as normal distribution, binomial, Poisson and also discussion of mean and variance for a discrete and continuous probability distribution. At the end of this course, sampling distribution and hypothesis testing are also introduced.

CREDIT
4

INTRODUCTION TO PROGRAMMING

COURSE NAME	COURSE CODE
INTRODUCTION TO PROGRAMMING	CP0015

SYNOPSIS

This course provides an introduction to computer programming. Students will learn algorithms, pseudocodes, and basic programming concepts such as control structures and user-defined functions using Python programming language.

CREDIT 5

INTRODUCTION TO WEB PROGRAMMING

COURSE NAME	COURSE CODE
INTRODUCTION TO WEB PROGRAMMING	CP0025

SYNOPSIS

This course will provide students with a fundamental understanding of computers and Internet technology. The course will focus on the new features of HTML5, CSS3 and JavaScript. Students will be exposed to related web server technologies ie. Apache and IIS web servers, database servers (MSSQL, MySQL and DB), Client-Server Scripting (PHP and ASP.NET) and Web Services (SOAP, REST, JSON).

CREDIT 5

MULTIMEDIA FUNDAMENTAL

COURSE NAME	COURSE CODE
MULTIMEDIA FUNDAMENTAL	CT0014

SYNOPSIS

This course covers an introduction to multimedia building blocks such as text, graphics, sound, animation, and video. Appropriate multimedia authoring software and hardware will be used and discussed. Processes involved in multimedia development such as planning and design will also be covered.

CREDIT 4

INTRODUCTION TO E-COMMERCE

COURSE NAME	COURSE CODE
INTRODUCTION TO E-COMMERCE	CE0023

SYNOPSIS

The Internet and the World Wide Web, simply referred to as the Web, are revolutionizing the way people, businesses and governments transact business via electronic commerce. This process is just beginning and will have an enormous impact on our activities and the way we related to people and organizations. This course will examine the major trends in electronic commerce (e-commerce), including the Internet, security, architectures, policy and social issues.

CREDIT 3

INTRODUCTION TO NETWORKING

COURSE NAME	COURSE CODE
INTRODUCTION TO NETWORKING	CN0013

SYNOPSIS

This course aims to provide students with entry-level knowledge in computer networking. It prepares students to study, design, configure and manage the communication process among various network devices (hardware and software) that are linked together to exchange information and share resources.

CREDIT 3

DATABASE

COURSE NAME	COURSE CODE
DATABASE	**CD0013**

SYNOPSIS

The course introduces the field of database management and its advantages as compared to file-based systems as the precursor to database systems. It examines the database environment and the three-level ANSI SPARC architecture. The course covers relational models and languages, SQL and a brief introduction to Data Definition Language (DDL). The course discusses the main techniques for database analysis and design such as ER Diagram and Normalization. The course also considers the issue of DBMS security. The course finally concentrates on three functions that should be provided by the Database Management System, namely transaction management, concurrency control and recovery.

CREDIT 3

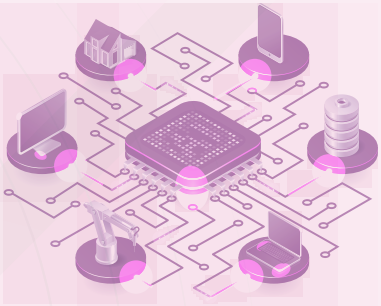
APPLICATION DESIGN AND DEVELOPMENT

COURSE NAME	COURSE CODE
APPLICATION DESIGN AND DEVELOPMENT	**CA0024**

SYNOPSIS

The course starts with the knowledge of system development and introduces them to methodology in system development. The course also introduces system requirement analysis as well as process and data model construction. The course includes the fundamentals of interface design principles as part of system development knowledge completion.

CREDIT 4



IT PROJECT

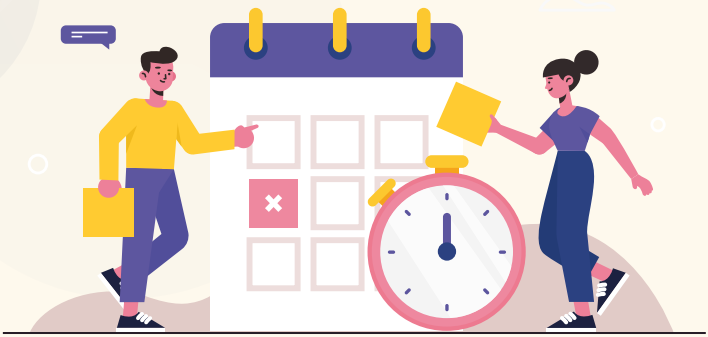
COURSE NAME	COURSE CODE
IT PROJECT	**CK0025**

SYNOPSIS

This course is designed to let students generate a creative project idea and teach them how to manage and handle an IT and multimedia application project properly by going through a complete and correct development process. It is also designed to let students apply all the IT knowledge to turn into an IT application product. It will focus on the development and implementation and handle project testing in producing an ICT product that can be adapted into business.

CREDIT
5

ACADEMIC CALENDAR
FOR FOUNDATION
2021/2022 SESSION



SEMESTER 1

2 August 2021 – 23 January 2022		
PERKARA / *DESCRIPTION*	**TARIKH** / *DATE*	**TEMPOH** / *DURATION*
Pendaftaran Pelajar Baharu *New Student Registration*	2 – 6 Aug 2021	1 Week
Minggu Suai Mesra *Orientation Week*	9 – 15 Aug 2021	1 Week
Kuliah *Lectures*	6 Aug 2021 – 15 Oct 2021	9 Weeks
Cuti Pertengahan Semester *Mid-Semester Break*	18 – 24 Oct 2021	1 Week
Peperiksaan Pertengahan Semester *Mid-Semester Examination*	25 –29 Oct 2021	1 Week
Kuliah *Lectures*	1 Nov – 31 Dec 2021	9 Weeks
Peperiksaan Akhir *Final Examination*	3 – 7 Jan 2022	1 Week
Cuti Semester *Semester Break*	10 – 23 Jan 2022	2 Weeks

ACADEMIC CALENDAR

SEMESTER 2

24 January 2022 – 10 June 2022		
PERKARA / *DESCRIPTION*	**TARIKH** / *DATE*	**TEMPOH** / *DURATION*
Kuliah *Lectures*	24 Jan – 26 Mar 2022	9 Weeks
Peperiksaan Pertengahan Semester *Mid-Semester Examination*	28 Mar – 1 Apr 2022	1 Week
Kuliah *Lectures*	4 – 29 Apr 2022	4 Weeks
Cuti Pertengahan Semester *Mid-Semester Break*	2 May – 8 May 2022	1 Week
Kuliah *Lectures*	9 May – 11 Jun 2022	5 Weeks
Peperiksaan Akhir *Final Examination*	13 – 18 Jun 2022	1 Week

NOTE:
Subject to change upon SENATE approval.

The updated directions will be circulated depending on the current situation.

PUBLIC HOLIDAY

CUTI UMUM & PERAYAAN / *PUBLIC HOLIDAY & FESTIVAL*	**TEMPOH** / *DURATION*
Hari Raya Aidilfitri* *Eid ul-Fitr*	13 - 14 May 2021
Pesta Menuai *Kaamatan Harvest Festival*	30 - 31 May 2021
Hari Jadi SPB Yang Dipertuan Agong *King's Birthday*	07Jun 2021
Hari Raya Qurban* *Eid ul-Adha*	20 Jul 2021
Awal Muharram *Maal Hijrah – Islamic New Year*	10 Aug 2021
Hari Kebangsaan *National Day*	31 Aug 2021
Hari Malaysia *Malaysia Day*	16 Sep 2021
Hari Jadi TYT Yang Dipertua Negeri Sabah *Head of State's Birthday*	1 Oct 2021
Maulidur Rasul *Prophet Muhammad's S.A.W Birthday*	19 Oct 2021
Deepavali* *Deepavali*	4 Nov 2021
Krismas *Christmas*	24 - 25 Dec 2021
Tahun Baru *New Year*	1 Jan 2022
Tahun Baru Cina *Chinese New Year*	1 - 2 Feb 2022
Good Friday *Good Friday*	15 Apr 2022
Hari Buruh *Labour Day*	1 May 2022
Hari Raya Aidilfitri* *Eid ul-Fitr*	2 - 3 May 2022
Hari Wesak *Wesak Day*	15 May 2022
Pesta Menuai *Kaamatan Harvest Festival*	30 - 31 May 2022
Hari Keputeraan YDP Agong *Agong's Birthday*	6 June 2022

METHODS OF STUDIES FOR THE FOUNDATION PROGRAMMES

Preparatory Centre for Science and Technology

It is a regulation to coordinate, manage, supervise and administer the academic affairs for a program of study which will lead to the award of the Foundation in Science Certificate offered by Universiti Malaysia Sabah as well as other related matters therewith.

In the exercise of the powers conferred by Section 37 of the Constitution of Universiti Malaysia Sabah [PU (A) 460/2010], the Board has proposed by the Senate makes the following rules:

SECTION 1

BEGINNING

1.1 Name, Enforcement and Application

1.1.1

This approach is named the Method for the Foundation in Science Study Programme Universiti Malaysia Sabah 2014 and shall come into force on the date as set by the Board.

1.1.2

This rule shall apply to the full-time study program leading to the award of the foundation certificate.

1.2 Definitions

Term	Definition
Practical	Defined as a study session conducted at a laboratory or such a place for a selected course.
Native and Bumiputera Sabah	Defined as a person who is classified under clause 6 (b) of Article 161A of the Federal Constitution.
Native and Bumiputera Sarawak	Defined as a person who is classified under clause 6 (a) of Article 161A of the Federal Constitution.
Academic Fraud	Defined as an offence committed by a student under Regulation 6 (Prohibition against Plagiarism) and Regulation 8 (Behavior during Examination) of the Rules of Universiti Malaysia Sabah (Discipline of Students) 1999 [P.U (A) 210/1999].
Ministry	Defined as the Education Ministry of Malaysia.
Credit	Defined as the load value measure based on the number of hours students take to achieve a set of learning outcomes. One (1) credit unit is equivalent to forty (40) hours of Student Learning Time (SLT) and is equivalent for one semester of study.
Lecture	Defined as study class for a selected course.
Malay	Defined as a person classified under Clause (2) Article 160 of the Federal Constitution.
Ethnic Person	Defined as a person classified under Clause (2) Article 160 of the Federal Constitution.
Student	Defined as a registered person to undergo a Foundation Programme of study at the university that leads to the award of a certificate.

Assessment	Defined as any methods to quantify achievement for courses taken by students (whether it's quizzes, tests, semester tests, assignments, coursework, etc.) as set by the Centre.
Final Examination	Defined as an examination which is carried out at the end of each semester.
CGPA	Defined as the cumulative average grade point achieved by a student in all the semesters undergone by the student.
SGPA	Defined as the cumulative average grade point achieved by a student in a semester.
Director	Defined as the Director of the Centre appointed by the Vice Chancellor.
Foundation Programme	Defined as the Foundation of Science, Foundation of Information of Technology or any programmes which is offered by the Centre that has been approved by the Senate.
Centre	Defined as the Preparatory Centre for the Science and Technology, Universiti Malaysia Sabah.
Semester	Defined as a duration of study in a session determined by the University.
Senate	Defined as the Senate of the University.
Study Re-Offer	Defined as a second opportunity given only once in a single period of study for students to study in the same or different program by abolishing the results of CGPS and CGPA obtained in the previous session.
Tutorial	Defined as a discussion session that is held between the students and a tutor/lecturer.

SECTION 2

2.1 Admission Requirements for the FOUNDATION IN SCIENCE PROGRAMME

Applicants are complusory to meet the following requirements for admission to the Foundation in Science Programme:

a. Applicants are to be Malay or natives of Sabah or Sarawak or the indigenenous from Peninsular Malaysia;

b. Pass the Sijil Pelajaran Malaysia (SPM) or its equivalent within the current year with **at least five (5) credits including Bahasa Malaysia and passed in History subject;**

and

c. Obtained a minimum of Grade C in Mathematics, Physics, Chemistry and Biology, and Additional Mathematics;

d. Candidates without a documented physical impairment that substantially limits practical/field work.

e. Meet other requirements as determined by the Senate.

2.2 Admission Requirements for the FOUNDATION IN INFORMATION TECHNOLOGY PROGRAMME

Applicants are compulsory to meet the following requirements for admission to the Foundation in Information Technology Programme:

a. Applicants are to be Malay or natives of Sabah or Sarawak or the indigenenous from Peninsular Malaysia;

b. Pass the Sijil Pelajaran Malaysia (SPM) or its equivalent within the current year with at **least five (5) credits including Bahasa Malaysia and pass in History subject;**

and

c. Obtained a minimum of Grade C+ in Mathematics or Additional Mathematics;

d. Meet other requirements as determined by the Senate.

SECTION 3 REGISTRATION TO THE CENTRE

3.1 Registrations

3.1.1 Applicants who are offered to undergo the Foundation Programme, and accept the offer will be accorded the status of a Centre Student after registration at the time appointed by the University.

3.1.2 Students will be automatically suspended from the semester should the study deferment application does not reach the Centre latest by the end of 1st week of the semester. The period for the study suspension will be taken into account and calculation will be based on the maximum study period of the student as a whole. Students are required to re-enroll for the following semester. Failing to re-enroll for the following semester before the end of 1st week of the semester, the student will be deemed as dismissed from the programme if no deferment application is received.

3.1.3 Students who defer their studies in the said semester are required to repeat the semester in the next session.

3.2 Deferment of Studies Due to Health Problems

3.2.1 Application of study deferment for any semester shall be forwarded to the Centre's Director for consideration. Approval of study deferment is subject to semester basis and not to be exceeded two (2) consecutive semesters.

3.2.2 A student who is not fit in his/her studies in the semester, may be granted a study deferment subject to certification from the University Medical Officer or the Government Hospital. The said certification from the authorized party concerned is required and compulsory for student who diagnoses mental disorders prior approval for study deferment is granted.

3.2.3 Notwithstanding the procedure set out in para 3.2.2, the parent or next of kin to the student who has prolonged health problems, may apply for the study deferment certification from the University Medical Officer or the Government Hospital to the Centre's Director for a semester on student's behalf within a reasonable period of time.

3.2.4 Upon approval of study deferment, all registered courses for the relevant semester will be cancelled. Written certification is required from the University Medical Officer or the Government Hospital concerned.

3.2.5 If study deferment is necessary for more than two (2) consecutive semesters, the student is required to refer to the University Medical Board for consent. The Senate will decide based on the recommendation of the Medical Board.

3.2.6 The approved study deferment period under para 3.2 will not be taken into account as the period of permitted study.

3.3 Deferment of Study other than Health Problems

3.3.1 Students who are encountering problems other than those specified in para 3.2 may apply the same in writing to the Centre's Director within the prescribed period.

3.3.2 Approval of study deferment is only allow for not more than one (1) semester.

3.3.3 Alternatively, for application of study deferment for more than one (1) semester consecutively, consideration and approval will be required to refer to the Senate.

3.3.4 Upon approval of study deferment, all registered courses for the relevant semester will be cancelled.

3.3.5 The approved period for study deferment under para3.3 will not be taken into account as the permitted study period.

3.4 Students Status

3.4.1 Students who have been granted the study deferment for the particular period will not be acknowledged as the student of the Centre throughout the particular said period.

SECTION 4

STUDY STRUCTURE

4.1 Study Structure of Science Programme

1. Students are required to complete a minimum of fifty (50) course credits or as set by the Senate to qualify for a foundation certificate.

2. The Academic Calendar for the Foundation of Science, UMS is divided into two (2) semesters.

3. Students are required to complete the foundation program in not less than two (2) semesters and not more than four (4) semesters calculated from the date of registration at the Center.

4. Students may change the program of study with the permission of the Director after attending a program of not less than one (1) semester.

5. In the event that the Senate approves the continuation of a study programme for a failed and dismissed student, all semesters that have been taken by the student will be considered as an approved period of study.

4.2 Study Structure of Information Technology Programme

1. Students are required to complete a minimum of fifty (50) course credits or as set by the Senate to qualify for a foundation certificate.

2. The Academic Calendar for the Foundation of Information Technology, UMS is divided into two (2) semesters.

3. Students are required to complete the foundation program in not less than two (2) semesters and not more than four (4) semesters calculated from the date of registration at the Center.

4. Students may change the program of study with the permission of the Director after attending a program of not less than one (1) semester.

5. In the event that the Senate approves the continuation of a study programme for a failed and dismissed student, all semesters that have been taken by the student will be considered as an approved period of study.

SECTION 5

COURSE REGISTRATION

5.1 Students will automatically be registered for courses required to be taken at each semester.

5.2 Students are required to undergo all forms of assessments for all registered courses including tests, assignments, practices and examinations.

SECTION 6

NON-ATTENDANCE DURING COURSE SEMESTER

6.1 Students are required to attend all lectures/tutorials/practical sessions during the course week.

6.2 If a student is unable to attend a lecture/tutorial/practical session based on health reasons, a sick leave certificate is compulsory to be submitted to the Centre's Director within 48 hours.

6.3 If a student is unable to attend a lecture/tutorial/practical session for reasons other than those in para 6.2, the student is required to submit a written application stating the acceptable reasons for the consideration of the Centre's Director.

6.4 Students who are absent from any course lectures/tutorials/practicals without any particular reasons acceptable to the Centre's Director will be given a reminder and a written warning letter.

6.5 Students who do not attend lectures/tutorials/ practicals without permission beyond 3 times the total number of classes of a course will be barred from taking the examination for the course.

SECTION 7

EXAMINATION

7.1 Examination Requisites

7.1.1 Students are required to have the examination slip for each examination they are taking.

7.1.2 Students will not be allowed to sit for an examination for a course if the Centre's Director has acknowledged that they have failed to comply with regulations 6.1 or 6.5 or with the requisites of a course.

7.1.3 Students who are unable to sit for the final examination due to health reasons is required to submit themselves or by their next of kin, the application for the postponement of the examination in writing with supporting evidence of sick certificate or medical report issued by the University Residents Clinic or the University Panel Clinic or Government Hospital to the Director of the Centre no later than 48 hours after the completion of the examination for the course.

7.1.4 Students who are unable to sit for the final examination based on the grounds of "welfare" should submit their own application for the postponement of the examination in writing together with evidence to the Centre's Director not later than 48 hours after the completion of the examination for the course.

7.1.5 The word "welfare" referred to in 7.1.4 includes the deaths of immediate relatives, fire, natural disaster and any situations deemed as such.

7.2 Examination Replacement

7.2.1 A student who is allowed to postpone the examination as specified in para 7.1.3 or 7.1.4 may sit for an examination replacement to be determined by the Centre.

7.2.2 An examination replacement shall be held for the student who has the approval to postpone the examination within two (2) weeks after the completion of the examination for the course.

7.2.3 If a student does not sit for the prescribed examination replacement, it will be considered as a fail and shall re-register the course in the next semester.

7.3 Reassessment of Final Examination

7.3.1 Students who fail for the first time for a course at any semester is required to sit for the reassessment final examination which can be taken once for each course.

7.3.2 If the student fails in the reassessment final examination as set in 7.3.1, then the student shall retake the course in the next semester.

7.4 Retake of Special Examination

7.4.1 A student who fails one (1) course taken during the last semester of his study may be considered for a special reassessment examination. The exam can only be taken once in the course of study.

7.4.2 The grading of the Special Reassessment Examination shall be 100% based on the said examination.

7.4.3 A student who fails in a certain course and sits for the final or special reassessment examination, the results will only be graded as pass/fail only.

7.4.4 A student who sits for the final or special reassessment examination and passes will receive the maximum grade "D" only.

7.5 Grade Course Reassessment

7.5.1 Students may apply for a revision of the course grade (except for special re-examination) to the Centre Director within one (1) week from the date the examination results are announced.

7.5.2 Any application for a review will be charged a processing fee of RM 200.00 per course. This payment is not refundable.

7.5.3 An Examination Committee shall be established for the purpose of revising the course's grade.

7.5.4 The Centre Director shall establish an Exam Committee consisting of:

(a) The Centre Director or a representative as Chairman or Deputy Director conducting academic functions in the event that the Director is incapable of discharging his duties or interest in a revised paper;
(b) Related Course Coordinator;
(c) Initial invigilator for the specific course;
(d) Two (2) other members of the same course; and
(e) The Centre's Assistant Registrar as the Secretary.

7.5.5 The Committee of Examiners shall ensure that all students assessment (projects, quizzes, assignments, semester examinations, etc.) including the final exam answer script and have been reviewed based on a scoring scheme and consistently and correctly rated. The course's answer script will not be re-evaluated.

7.5.6 The Senate's decision with regards to the review application of the course grade is final.

SECTION 8

ASSESSMENT STRUCTURE

8.1 Grading Value of Grades

8.1.1 Grading of each course covers semester courses and other assessments throughout the semester and includes final semester exams.

8.1.2 Grading of a course offered by the Centre other than courses without final examination of the semester are by way of continuous assessment and semester exams of not less than 30% and not exceeding 50%.

8.1.3 Specific course grade and grade value are given as follows:

GRADE						
EXCELLENT	A	A-				
	Percentage 80-100	Percentage 75-79				
	Grade Value 4.00	Grade Value 3.67				
CREDIT	B+	B	B-			
	Percentage 70-74	Percentage 65-69	Percentage 60-64			
	Grade Value 3.33	Grade Value 3.00	Grade Value 2.67			
PASS	C+	C	C-	D+	D	
	Percentage 55-59	Percentage 50-54	Percentage 45-49	Percentage 40-44	Percentage 35-39	
	Grade Value 2.33	Grade Value 2.00	Grade Value 1.67	Grade Value 1.33	Grade Value 1.00	
FAIL	E					
	Percentage 0-34					
	Grade Value 0.00					

8.2 Without grade value status

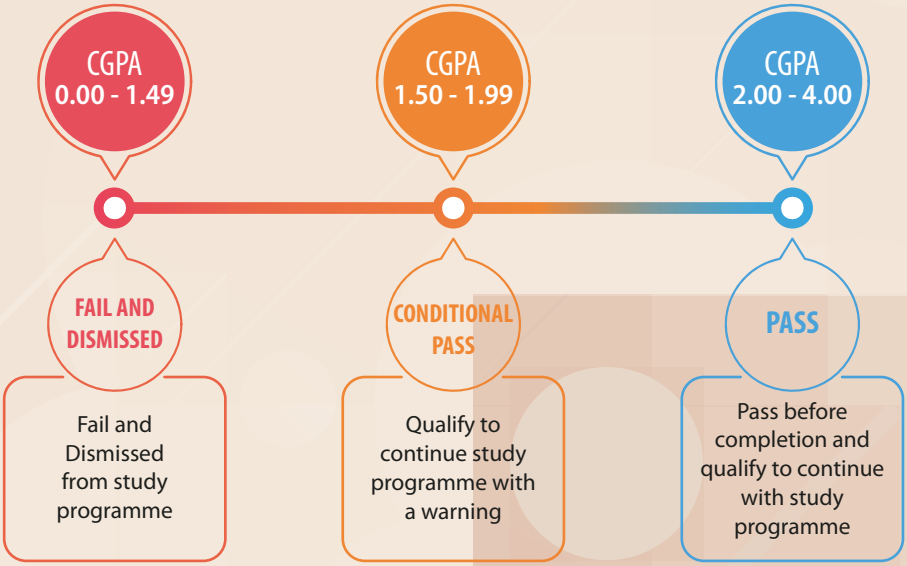
TP Postponement of Exam status is is given to students who postpone their examinations with the permission from the Centre Director.

XX The status is given if a student is suspected to have commited an academic fraud for a course. This status will remain as such until the Disciplinary Authority makes a decision.

X Absent is a grade given to students who fail to attend any assessment of a course.

8.3 Determination of Study Status according to CGPA

8.3.1 Study status degree according to CGPA are as follows :



8.3.2 Students who receive a CGPA of conditional passes for two (2) times consecutively will be considered as fail and dismissed from study programme.

8.4 Calculation of CGPA and SGPA

8.4.1 All courses except courses that are granted by the Senate will be taken into account for calculating the Semester Grade Point (SGPA) and Cumulative Grade Point Average (CGPA).

8.4.2 Courses earning "E" grades are also taken into account in determining CGPS and CGPA.

8.4.3 Regeneration of CGPA for students who repeat the failed courses will be by replacing the original course grade using repeat course grades, which is better without changing the SGPA for the original semester course.

8.4.4 Students who are found guilty and punished under the Rules of Universiti Malaysia Sabah (Disciplinary of Students) Act 1999 relating to the teaching and learning of the courses taken by the students shall be awarded "E" grade for the course unless the Senate decides otherwise.

8.5 Average Semester and Cumulative Grading Calculation Methods

8.5.1 The average calculation of SGPA Value is as follows:

$$\text{SGPA} = \frac{\text{Total value of each semester}}{\text{Total Credit Hours for all courses of the current semester}}$$

8.5.2 The average calculation of CGPA Value is as follows:

$$\text{CGPA} = \frac{\text{Total grade value of semester}}{\text{Total Credit Hours Accumulated for All Semesters}}$$

8.6 Study Re-offer

8.6.1 Students who have failed and have been dismissed may appeal to apply for the repeat of the course to the Centre Director.

8.6.2 The appeal of sub-rule 8.6.1 shall be subject to the Senate's approval and the Senate's decision shall be final.

8.6.3 A study re-offer will be granted for approved students to repeat the course.

8.6.4 A study re-offer gives a second chance for a student to commence studying in the same or different program by abolishing academic results/records at the previous session.

SECTION 9 REQUIREMENTS FOR THE AWARD OF A FOUNDATION CERTIFICATE

9.1.1 A student is required to meet ALL of the following requirements and requisites of the Center for the following certificates:

(a) Passing all courses and completing the credits set out in accordance with the requirements of the Center approved by the Senate within the prescribed period;

(b) Achieving CGPA of minimally 2.00;

(c) Completing the minimum duration set for the program of study; and

(d) Enacted by the Senate;

9.1.2 A student who has been awarded the certificate of qualification is eligible to apply for bachelor programs at Universiti Malaysia Sabah only.

SECTION 10

GENERAL ALLOCATIONS

10.1 This method and all its interpretations made by the Senate shall be enforced with immediate effect.

10.2 Any further execution of guidelines, manuals and methods may be made under any provision of the Rules and shall be deemed to be complied with.

10.3 However, the Senate reserves the right to amend it from time to time as and when circumstances require it.

10.4 The Senate has the authority to grant such requirement exemption on this method deemed from time to time.

RULES OF STUDENTS EXAMINATION

The Preparatory Centre for Science and Technology has concluded that all students enrolled to the Centre is required to comply with the student's examination regulations set by the Academic Services Division of Universiti Malaysia Sabah. This rule is written in the 'Examination Manual, Universiti Malaysia Sabah.

1.0 Student Tasks Before Exam

1.1 Students are to ensure they have fully paid all tuition fees before sitting for the examination;

1.2 Students are required to apply to sit for the examination at each semester by submitting the application form to the Academic Services Division within the prescribed period;

1.3 Students are required to bring their Examination Slip, Student Card and Identity Card for the examination;

1.4 Students should always be reminded to check the examination timetable to avoid any unnecessary mistakes on examination schedule and venue for the relevant course listed. Students are also advise to always check out the Information Board for any updates of the examination timetable;

1.5 Academic Services Division will update and inform any changes and updates of the examination timetable through printed notices to be posted on the University's Information Board. Oversights for not obtaining the correct timetable will not be acceptable for absence from sitting the examination;

1.6 Students are required to be at the examination hall/room before the examination starts. Extension of time for the examination is not allowed. Students are required to bring their identification and student card for the examination. Failing so, students are required to justify with valid reasons to the Chief Invigilator/Invigilator on duty if he/she is allowed to sit for the examination;

1.7 Students are only allowed to bring books, papers, documents, photographs or any other items to the examination room that are verified and permitted by the Examination Invigilators. Any books, papers, documents or photographs, except those verified by Supervisors, are not allowed to bring into or out of the examination hall/room.

1.8 Students are not allowed to enter the examination hall/room unless instructed by the Chief Invigilator/Supervisor on duty. Students are permitted to enter the examination hall/room 10 minutes earlier prior examination starts.

1.9 Students are to take your seat quietly according to the designated number allocated to you in the examination hall/room.

1.10 An X grade of score 0.0 will be awarded to students who are not qualify for the examination.

EXAMINATION RULES

2.0 Candidate's Responsibilities During Examination

2.1 After seated, candidates are required to:

2.1.1 fill in the examination Attendance Form and individual answer sheet;

2.1.2 place your examination slip, Identity Card and Student Card with the Attendance Form provided. The Examination Invigilator will collect the Attendance Form from each candidate accordingly. Identity Card, Student Card and Examination Slip will be retained by candidate after inspected by Invigilator;

2.2 Smoking is strictly not allowed in the examination hall/room.

2.3 Candidates are prohibited to bring their mobile phones into the examination hall/room;

2.4 Conversations, interaction or any means of communication is strictly prohibited during the examination. Candidates are to raise your hand should you like to speak to the Invigilator;

2.5 The Chief Invigilator/Invigilator shall notify all candidates the examination completion time. Once examination time ends, all candidates are required to pen off;

2.6 Candidates are required to compile/bind their respective answer scripts ready for submission. The Chief Invigilator/Invigilator will collect the answer scripts from each student. Candidates are to exit the examination hall/room when their answer scripts are collected by the Invigilator;

2.7 Candidates are allowed to exit the examination hall/room thirty (30) minutes after the examination ended. However, candidates are not allowed to leave the examination hall/room thirty (30) minutes prior the examinations completed;

2.8 Should there is any candidate not well during the examination, he/she is required to report to the Chief Invigilator/Invigilator on duty immediately;

2.9 Should there be any cheating or circumventing or enabling others to behave so during the examinations, such candidate will be subject to disciplinary actions.

3.0 Candidate's Responsibilities When Not Able to Sit for The Examination

3.1 Candidate is required to write in to the Director of Preparatory Centre for Science and Technology with valid reasons, justification and supporting documents (if any) for unable to sit for the examination forty-right (48) hours prior to examination or within forty-right (48) hours after the examination. Failing so will result to failed grade for the course registered. Any inquiries pertaining to the examination should be forwarded to the Academic Services Division.

3.2 Candidate shall deem to fail the entire examination should he/she fails to sit for any examination without providing any justifiable and acceptable reasons to the Undergraduate Studies Board of the University or without prior approval from the Board.

3.3 Candidate may apply to postpone his/her examination to the Centre's Director should he/she is unwell to sit for the examination. Application for the postponement should be made within forty-eight (48) hours after the examination.

3.4 The postpone application on health reasons for the final semester examination will require to have the medical doctor's endorsement certificate, acknowledged by Universiti Malaysia Sabah. Applications on reasons other than health, will require the certification from the Centre's Director before taken into consideration for approval. The replacement examination can only be scheduled based on the merits of those cases.

3.5 Candidate who has enrolled for the examination for any course and fail to turn up for the examination will be awarded X Grade (Absent from Examination) with grade point 0.0 .

ETHICS FOR STUDENTS' DRESSING AND APPEARANCE

It is an established regulation at the Preparatory Centre for Science and Technology that all students enrolled under the Foundation Programmes are to be attired at the following dressing ethics while pursuing studies at the centre (inclusive dealing administration matters in the office)

MALE STUDENTS

1. Short/long sleeve shirt and necktie.
   - Shirt is always to be tucked in.
2. Long pants/ Slacks.
   - Jeans are not allowed.

• Attire other than those mentioned above are not allowed

ATTIRE THAT ARE NOT ALLOWED

1. **All students are forbidden to dress/wear/use the followings :**
   - Slippers – including all types of slippers, open toe leather and/or sandals.
   - T-Shirts.
   - Jeans.
   - Caps/Hats.
   - Hand Gloves.
   - Any attire that fully or partially covers the face.
   - Attire that are not decent or not suitable with environment.
2. **All male students are not allowed to keep long hair.**
3. **Hair must be neatly combed/tied at all times.**
4. **Only closed-toe shoes are allowed to be worn in the laboratories. Slippers and sandals are not permitted.**

FEMALE STUDENTS

Malay kurung dress /kebaya dress /kebarung dress only

REMINDER

The Preparatory Centre for Science and Technology reserves the right to prohibit students from attending the class if it is found that students do not comply with the above mentioned dressing ethics. Disciplinary action will be taken any time if the student found disobeying the ethic regulations set.

LAYOUT PLANS

Faculty of Science and Natural Resources (FSSA)

- Tutorial Rooms BT15, 16, 17 & 18 (Level 1, Block B1)
- Chemistry, Physics and Biology Foundation of Science Laboratories (Level G, Block C, Block B1)
- Resource Centre of the Preparatory for Science and Technology (PPST) (Level 1, Block B1)

Preparatory Centre of Science and Technology (PPST)

- Administration Offices (PPST)
- Lecture Rooms 1 & 2
- Tutorial Rooms 1, 2, 3, 4 & 5
- Laboratories of Biology 1, Chemistry 1 & Physics 1

ANNEXE Building, Preparatory Centre of Science and Technology (PPST)

- Lecture Rooms 3 & 4
- Tutorial Rooms 6, 7, 8, & 9
- Laboratories of Biology 2, Chemistry 2 & Physics 2
- Computer Laboratory
- Language Laboratory

LABORATORIES

Tutorial Rooms

The learning sessions for the Foundation of Science Programme is integrated within three areas:
(1) The Preparatory Centre for Science and Technology Building (PPST), (2) ANNEXE Building, the Preparatory Centre for Science and Technology, and (3) Science and Technology Complex, Faculty of Science and Natural Resources (FSSA).

The PPST Building provides two lecture rooms, Lecture Room 1 and 2, five tutorial rooms being Tutorial Room 1, 2, 3, 4, and 5. While at the ANNEXE Building of the Preparatory Centre for Science and Technology (PPST) also has two lecture rooms which is Lecture Room 3 and 4 and four tutorial rooms being Tutorial Room 6, 7, 8, and 9. These lecture and tutorial rooms are equipped with air conditioning, laptop and LCD transmitters for the students comfort.

The Science and Technology Complex of the Faculty of Science and Technology (FSSA) provides four tutorial rooms being Tutorial Room 15, 16, 17 and 18 located at Level 1, Block B1.

Laboratories

There are in total nine laboratories available for the practical/lab sessions for the Foundation of Science Programme. There are three located at the Preparatory Centre of Science and Technology, PPST Buidling, three laboratories at the Annexe Building, PPST and three more at the Science and Technology Complex, Faculty of Science and Natural Resources Building (FSSA) :

PPST Building	ANNEXE Building, PPST	Science and Technology Complex, FSSA
1. Biology 1 Laboratory	1. Biology 2 Laboratory	1. Foundation of Science Lab (Biology) Level G, Block B1
2. Chemistry 1 Laboratory	2. Chemistry 2 Laboratory	2. Foundation of Science Lab (Chemistry) Level G, Block C
3. Physics 1 Laboratory	3. Physics 2 Laboratory	3. Foundation of Science Lab (Physics) Level G, Block B1

GENERAL LABORATORY SAFETY REGULATIONS

General Rules

- Students are prohibited from practicing or experimenting in a laboratory unaccompanied. Experiments in the laboratory can only be conducted with the presence of at least one laboratory assistant or co-worker.
- Students are not allowed to conduct experiments in laboratories before or after working hours unless accompanied by a co-worker / laboratory assistant on duty.
- Unauthorised persons are prohibited from entering the laboratories unless on official matters or with permission from the Director.
- While in the laboratories, it is compulsory to wear laboratory coats and covered shoes.
- Usage of safety glasses are compulsory for all types of experiments involving hazardous materials such as acid and base solutions, organic solvents, high-energy source of light, and so forth.
- Students with long hair should tie their hair neatly while those who wear the scarf/jilbab are to ensure that the ends of their scarfs/jilbab are secured neatly under the laboratory coat.
- Eating, drinking and smoking in laboratories are prohibited.
- Usage of hand phones while performing experiments in laboratories is prohibited.
- Joking and running around with raised voices in a laboratory is strictly prohibited.
- All chemical/biological/physical wastes (such as mixtures of organic solvents, bacteria and broken glass containers) should be disposed in the designated waste bins that have been labelled specifically. Do not throw any waste into the sink or an ordinary waste bin.
- Any kind of preparation or experiment using the mouth is prohibited.
- To ensure that working desks and laboratories are clean and tidy before leaving. To ensure as well, the face and hands are cleaned before leaving the laboratories.
- Students are prohibited from keeping and making copies of any of the laboratory keys.
- If there are any accidents/ damages to the apparatus, it should be reported verbally to the staff of the laboratory/officer-in-charge. This is to be followed by a report in writing to the Science Officer.
- For experiments involving radioactive materials, please ensure that laboratory users are working in a safe area from exposure to these materials (please consult the radiation officer if you are not sure of radioactive material handling procedures).

Laboratory Attire Ethics

- Lab coats should always be worn in the laboratories when experiments are in progress.
- Lab coats are prohibited to be worn outside the laboratory areas to prevent the spread of hazardous chemicals or microbes in public places. In addition to that, lab coats should be washed regularly.
- Laboratory users are encouraged to wear long sleeves shirts/blouses and long pants during experiments. Laboratory users are prohibited from wearing shorts or short skirts.
- Laboratory users may be exempted from wearing a necktie to avoid the possibility of fire or chemical exposure during experiments.
- It is prohibited to wear rings, earrings, chains, watches and other jewellery when carrying out any experiment. Apart from the risk of the jewellery being damaged when exposed to chemicals, it will also trap hazardous chemicals or microbes.
- Lab users should wear lead-based laboratory coats when handling experiments that produce high-energy rays such as X-rays and radioactive materials.
- Kindly contact the Management team of The Preparatory Centre for Science and Technology for further information on laboratory regulations.

FACILITIES AVAILABLE IN CAMPUS

Financial Assistance/Scholarships Offered

- Students of the Preparatory Centre for Science and Technology will receive financial aid for one-year period of study from the Ministry of Higher Education. (Subject to terms and conditions)

Accommodation

- The Preparatory Centre for Science and Technology, Universiti Malaysia Sabah provides an exclusive residential colleges for its students.
- It is COMPULSORY for all students to stay in a designated residential college as directed by Student Unit of Student Affairs Division.

Transportation

- Shuttle bus services are provided to facilitate the movement of students from residential colleges to the Preparatory Centre for Science and Technology and the surrounding areas of Universiti Malaysia Sabah campus.

Students Health Services

- Students can seek medical treatment at the Pusat Warga UMS, Universiti Malaysia Sabah.

Sports and Recreation Facilities

- Students can indulge in sports and recreational activities at the UMS Sports Complex such as football fields, tennis and sepak takraw amongst others.

Library Facilities

- Students can make references at the Universiti Malaysia Sabah library.
- Various services are offered to students, amongst them are computers, internet, multimedia etc.
- Further information is available from the library link via the website www.ums.edu.my
- Students can also make references at Pusat Sumber, PPST, located at FSSA.

Counselling and Career Guidance

- Counselling and career guidance services are provided at the Student Affairs Department to guide students.
- Further information is available from the department's link via the website www.ums.edu.my.

STUDY PROSPECTS AT UNIVERSITI MALAYSIA SABAH

Students who have completed their studies and passed accordingly to the standards determined at the Preparatory Centre for Science and Technology will continue to further their undergraduate studies for the award of a Bachelor's Degree with Honours at the Universiti Malaysia Sabah ONLY.

FOUNDATION IN SCIENCE PROGRAMME

Students may choose any of the specialised programmes offered as follows:

1 FACULTY OF SCIENCE AND NATURAL RESOURCES

Bachelor's Degree in Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-545-002	Industrial Chemistry
UH-6-461-001	Mathematics with Economics
UH-6-461-002	Mathematics with Computer Graphics
UH-6-422-001	Environmental Science
UH-6-443-002	Geology
UH-6-441-001	Industrial Physics
UH-6-624-001	Aquaculture
UH-6-443-003	Marine Sciences
UH-6-545-001	Biotechnology

2 FACULTY OF ENGINEERING

Bachelor's Degree in Engineering with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-526-001	Civil Engineering
UH-6-523-001	Electrical and Electronic Engineering
UH-6-524-001	Chemical Engineering
UH-6-521-001	Mechanical Engineering
UH-6-523-002	Electronic Engineering (Computer)
UH-6-524-002	Oil and Gas Engineering

*Subject to prescribed conditions

FOUNDATION INSCIENCE PROGRAMME

3 FACULTY OF FOOD SCIENCES AND NUTRITIONS

Bachelor's Degree in Food Sciences with Honour

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-541-002	Food Sciences and Nutrition
UH-6-541-004	Food and Bioprocess Technology
UH-6-541-001	Food Services
UH-6-541-003	Nutritions

*Subject to prescribed conditions

4 FACULTY OF COMPUTING AND INFORMATICS

Bachelor's Degree in Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-481-003	Multimedia Technology
UH-6-481-004	Business Computing

*Subject to prescribed conditions

Bachelor's Degree in Computer Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-481-001	Software Engineering
UH-6-481-002	Network Engineering
UH-6-481-005	Data Science

*Subject to prescribed conditions

5 FACULTY OF MEDICAL AND HEALTH SCIENCES

Bachelor's Degree in Medicine and Surgery (MBBS)

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-721-001	Doctor in Medicine

*Subject to prescribed conditions

6 FACULTY OF SUSTAINABLE AGRICULTURE

Bachelor's Degree in Agriculture Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-621-001	Crop Production
UH-6-622-001	Horticulture and Landscape
UH-6-621-002	Livestock Production

*Subject to prescribed conditions

7 FACULTY OF TROPICAL FORESTRY

Bachelor's Degree in Forestry Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-451-001	Conservation Biology
UH-6-623-001	International Tropical Forestry
UH-6-852-001	Nature Park and Recreation
UH-6-543-001	Wood Technology and Industry
UH-6-623-002	Forest Plantation and Forestry

*Subject to prescribed conditions

FOUNDATION IN INFORMATION TECHNOLOGY PROGRAMME

Students may choose any of the specialised programmes offered as follows:

1 FACULTY OF COMPUTING AND INFORMATICS

Bachelor's Degree in Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-481-003	Multimedia Technology
UH-6-481-004	Business Computing

*Subject to prescribed conditions

Bachelor's Degree in Computer Science with Honours

CODE	SPECIALISED PROGRAMME/COURSE
UH-6-481-001	Software Engineering
UH-6-481-002	Network Engineering
UH-6-481-005	Data Science

*Subject to prescribed conditions

UNIVERSITY SONG

BERTEKAD CEMERLANG

UMS lambang puncak jaya
Pancaran perjuangan semangat waja
Pembentuk citra pelindung budaya
Memandu bangsa memaju Negara

Di sini dicanai segala fikiran
Di sini dikaji segala wawasan
Ilmu iman sumber pedoman
Bakti curah kasih budiman

Bayu bertiup nafasmu sejati
Bumi terhampar tubuhmu abadi
Samudera biru wajahmu berseri
Suria menyinar tenagamu murni

Kaulah harapan bangsa maju
Kaulah jambatan nusa bersatu
Berdiri megah kekal bermutu
Menunjuk arah bakal dituju

UMS kaulah tunggak Negara
Warisan sejati Malaysia tercinta
Bertekad cemerlang menjadi budaya
Semoga unggul dan sejahtera

Song: Prof. Madya Abdul Jamal Abd. Hamid
Lyrics: Tuan Haji Salleh Haji Yusof

UMS
UNIVERSITI MALAYSIA SABAH

MAKLUMAT LANJUT

Untuk mendapatkan maklumat lanjut dan cara kemasukan ke program ini, sila hubungi:

PUSAT PERSEDIAAN SAINS DAN TEKNOLOGI

Universiti Malaysia Sabah,
Jalan UMS, 88400 Kota Kinabalu, Sabah

088-320 000
samb. 613611/613607/613604

ums.edu.my/ppstv2/